# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Inventors: | Fabio Casati, et al. | Examiner: | Kalyan Deshpande |
| Serial No.: | 10/057,143 | Group Art Unit: | 3625 |
| Filed: | January 25, 2002 | Docket No.: | 10008149-1 |
| Title: | Exception Analysis, Prediction, and Prevention Method and System | | |

## REPLY APPEAL BRIEF UNDER 37 C.F.R. § 41.41

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Answer mailed September 4, 2008, Appellants file this Reply Brief in accordance with 37 C.F.R. § 41.41.

## AUTHORIZATION TO DEBIT ACCOUNT

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's deposit account no. 08-2025.

New Grounds Rejection: 35 U.S.C. § 101

In Examiner Answer mailed 09/04/2008, the examiner cites new grounds of
rejection and rejects claims 15-26 as being directed to non-statutory subject matter under
35 U.S.C. § 101. The examiner argues that claims 15-26 are directed to a process that
fails to either (1) be tied to another statutory class (such as a particular apparatus) or (2)
transform underlying subject matter. Appellants respectfully disagree.

The Federal Circuit has discussed data transformation in response to a series of
cases concerning the eligibility of machines and machine-implemented methods
employing a mathematical algorithm. In assessing the eligibility of these specific types of
claims, the court adopted a rule requiring such claims to produce a "useful, concrete and
tangible result." *See, e.g., State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149
F.3d 1368, 1373 (Fed. Cir. 1998).

From these Federal Circuit cases, the precedent can be summarized as follows:
Any computer program claimed as a machine implementing the program *(Alappat, State
Street)* or as a method of a machine implementing the program *(AT&T)*, is patentable if it
transforms data and achieves a useful, concrete and tangible result *(State Street, AT&T)*.
However, notwithstanding a useful, concrete and tangible result, an exception occurs
when the invention in actuality preempts an abstract idea, as in a mathematical algorithm
*(Gottschalk v. Benson*, 409 U.S. 64, 71-2 (1972)).

Appellants state that data is transformed and this transformation achieves a useful,
concrete and tangible result. In claim 15, data is prepared from workflow executions.
This data then generates an exception prediction model. This model, in turn, is used to
generate a prediction of an exception. Clearly, the data undergoes a transformation from
workflow execution data to a prediction model to a prediction of an exception in a
workflow. This transformation of workflow execution data to a model and ultimately to
a prediction of an exception is clearly recited in the elements of claim 15.

Claim 15 recites that an action is performed during execution of the workflow to
avoid the occurrence of the predicted exception. In other words, the claim positively
recites the occurrence of an event: "performing an action during execution of the
workflow instance to avoid occurrence of the exception in the workflow instance."
Avoiding exceptions in a workflow instance is not only useful, concrete, and tangible, but

also quite important in business processes. The background section of Appellants' patent application discusses the importance of reducing exceptions in business processes:

> In order to attract and retain customers, as well as business partners, organizations need to provide their services (i.e., execute their processes) with a high, consistent, and predictable quality. In particular, a critical issue in ensuring business process quality is that of reducing the occurrence of exceptions (i.e., deviations from the optimal or acceptable process execution). (See paragraph beginning on line 26 of page 2).

Clearly, reducing exceptions in business processes is useful and valuable for businesses. In fact, predicting and avoiding such exceptions enables businesses to attract and retain customers and compete in the market place.

Claim 15 recites a useful, concrete, and tangible result that can be used to avoid exceptions in business processes. Specifically, claim 15 recites "performing an action during execution of the workflow instance to avoid occurrence of the exception in the workflow instance."

## Response to Examiner's Arguments Regarding 112 & 102 Rejections

In Examiner Answer mailed 09/04/2008, the examiner reiterates the rejection of claims 15-26 under 35 USC § 102(b) as being anticipated by Casati and the rejection of claims 21-22 under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement. A response to these rejections is articulated in the Appeal Brief filed 07/14/2008, and this response is not repeated here.

Appellants respectfully ask the BPAI to reverse the outstanding rejections.

Respectfully submitted,

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